Subscribe to us on Telegram for more analysis and info
Follow us on Twitter

C.C.C.

Crypto Chasers Confidential

Saturday, February 10, 2018
Follow our Telegram Channel for more high quality in depth analysis'
Follow us on Twitter
Check out our new website
Subscribe to our RSS Feed

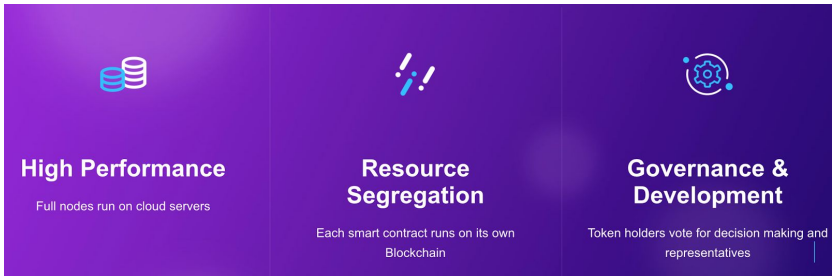
Aelf (ELF) Analysis

Type: Token
Circulating Supply: 250,000,000 ELF
Total Supply: 260,000,000 ELF
Marketcap: $307,922,500 USD
Whitepaper Style: Some technical sections but mostly non-technical.

Official Website
Coinmarketcap
Source Code
Whitepaper

About

The below part is from the about section on their website, not very descriptive so let's check the whitepaper.



Crypto Chasers Confidential - Aelf (ELF) Analysis, Subscribe to https://t.me/cryptochasersconfd for more free high quality ICO, coin and token analysis, request a coin analysis by DM and follow us on Twitter @crypto_chasers
Disclaimer: This is not intended to be investment advice, you are responsible for your actions (DYOR)

From the whitepaper, we found a section called "Key Objectives of Aelf", we have summarized the sections below:

A Highly Customizable OS for Commercial Use
They're trying to make an OS platform for the blockchain community.
We envision ÆIf as a highly efficient and customizable OS and will become the "Linux system" in Blockchain community. Take Linux as an example, Linux Kernel and various Linux versions constitute the large and successful Linux family. Linux Kernel resolves the most fundamental, critical and time-consuming parts, allowing other developers to make customized systems based on application scenario and customer needs. This makes Linux the most popular server OS, supporting all kinds of industries. The same idea has been incorporated into ÆIf design. Firstly, we define and implement the ÆIf Kernel which includes fundamental functions of a Blockchain system, namely the minimum viable Blockchain system. Secondly, we develop a "shell" as the basic interactive interface to the Core. Users can either use the complete Blockchain OS, or rapidly develop a customized OS based on the Core via redefining the Core through interfaces.

Cross-Chain Interaction
Aelf is going to be able to interact with other blockchains so that they cant pass information between chains.
ÆIf will interact with Bitcoin, Ethereum, and other Blockchain systems. cross-chain interaction with mainstream Chains will be realized via messaging. And it will also form an endogenous multi-level cross-chain structure based on cross-chain interaction, in order to share the digital assets, users and information.

Performance Improvement
Their distributed structure with their blockchain will improve performance for business objectives. They're essentially planning on snapshotting data and trimming transaction details to improve performance.
In traditional IT architecture, distributed structure is the popular solution to debottleneck capability limitation. Blockchain system should also support distributed parallel processing, e.g. parallel processing multiple transactions with non-competing data to improve transaction efficiency. In addition, when one chain has become too complex to be effectively processed, it should be split into parallel Chains to offload the traffic. The initial design of an effective Blockchain should focus on solving specific business scenarios, rather than combining all Smart Contracts on one single Chain. In order to deliver optimal performance based on business requirement, the Chain has to provide effective and customized data structure, Smart Contract logic, and Consensus Protocol specifically for the targeted objective. By doing so, the components and data within the Chain will be much simpler and easy to manage. In addition, ÆIf can define the mechanism to trigger snapshot in the system. Upon defined cycle, it takes a

snapshot of current data and trims detailed transaction data. A new Genesis Block will include all subsequent transactions. This idea has been adopted in traditional IT database architecture to alleviate system inflation.

Protocol Update

They're going to have a consensus protocol that avoids disputes over a protocol update, they want to avoid a situation that often arises with Bitcoin - that's what this alludes to.

Upon the Genesis of Blockchain, the voting and update mechanism has to be clearly defined. With introduction of Consensus Protocol to include new features in the future, it avoids impasse and dispute over Protocol update.

Private Chain Module

They're going to have a private chain module for businesses to use.

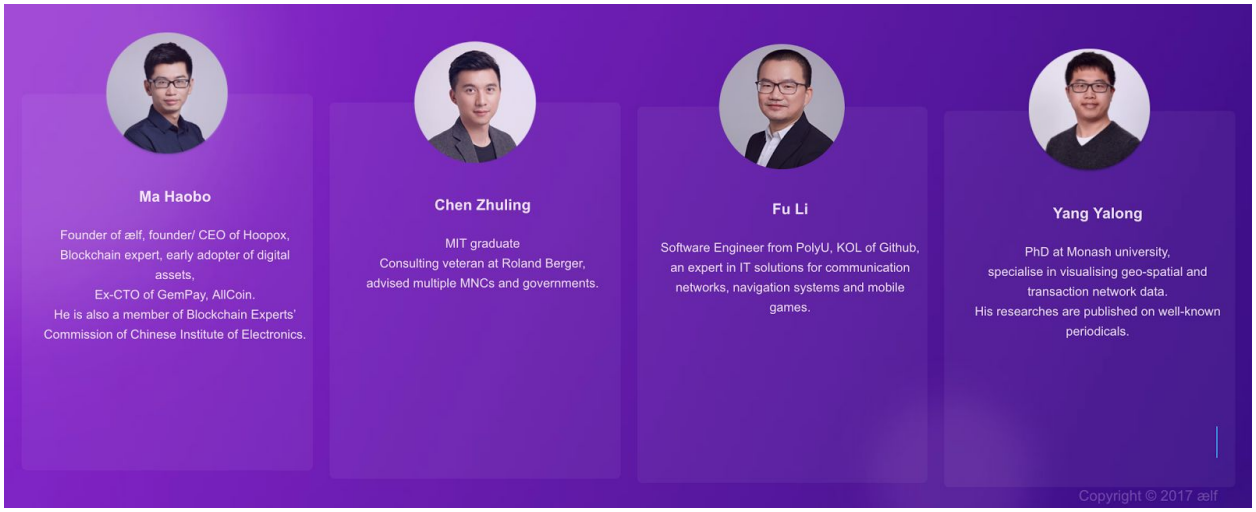
Considerable number of businesses is interested in Private Chain to leverage the advantage of Blockchain technology. These private Chains usually exist in isolation without any connection to external eco-system or other businesses. We provide a model similar to Amazon cloud service "AMI", where users can rapidly create an independent Chain using Private Chain module and obtain full ownership of it.

They're trying to use tested solutions to optimize

The core principle of Ælf is to resolve practical technical problems using solutions that have already been tested. Instead of "optimizing" the concepts of Blockchain, more attention is paid to provide a mature configuration for the stable execution of business applications.

Team

Team bios taken from their official website, unfortunately no LinkedIn is provided.



Ma Haobo

We tried searching for him on LinkedIn but could not find him, we looked him up on Google (as one does) and found this article on Medium describing some of his credentials:

The aelf project core team includes Blockchain technical expert, Ma Haobo, who has developed a Crypto exchange, crypto payment system and Blockchain system in the past. He is also a ***member of Blockchain Experts Committee at Chinese Institute of Electronics.***

We looked up the Chinese Institute of Electronics and found that:

The Chinese Institute of Electronics is a nationwide academic, non-profit corporate body that is legally registered and voluntarily formed by technical workers and related enterprises in the electronic information field. It is a component of the China Science and Technology Association and is affiliated to Ministry of Industry and Information Technology of the People's Republic of China.

We found his GitHub though https://github.com/loning and he seems to be a fairly active C# contributor as of recently.

Chen Zhuling

We find Chen on LinkedIn we have posted some of his past experience and education on the next page.

Experience

Co-Founder
Aelf project
Sep 2017 – Present • 6 mos

Aelf is the next generation multi-layer parallel computing distributed network

Advisor
FBG Capital
Aug 2017 – Present • 7 mos
Singapore

Senior Consultant
Roland Berger
Sep 2013 – Present • 4 yrs 6 mos
Singapore

Key projects:
1. Assisted an Asian country to liberalise its banking sector, including designing the roadmap and managing the whole process
2. Assisted a leading Asian Telco Operator to transform towards a value-driven business model
3. Assisted a global premium car company to review its company strategy in Asia-Pacific region (16 countries), including market forecast, competitive analysis, market entry assessment
4. Advised a Fortune 500 client on its Asia-Pacific headquarter location and organization

Industry-collaboration project
Infineon Technologies
Feb 2013 – Aug 2013 • 7 mos
Singapore

Education

Massachusetts Institute of Technology
Master of Engineering (M.Eng.), Manufacturing
2011 – 2012
Activities and Societies: MIT Sloan Operations Management Club, MIT Consulting Club

1st place at USAID-Smith School Strategy & Operations Case Competition (2012)
3rd place at MIT-Harvard Case Competition (2012)
Vice President of MIT Chinese Student and Scholar Association (2012)

Singapore university of Technology and Design
Master of Engineering by research, Engineering Systems and Design
2012 – 2013

First batch of MIT-SUTD dual master program

Nanyang Technological University
Bachelor of Engineering (B.Eng.), Chemical and Biomolecular Engineering, First class honor
2007 – 2011
Activities and Societies: NTU Modern Jazz Dance Club

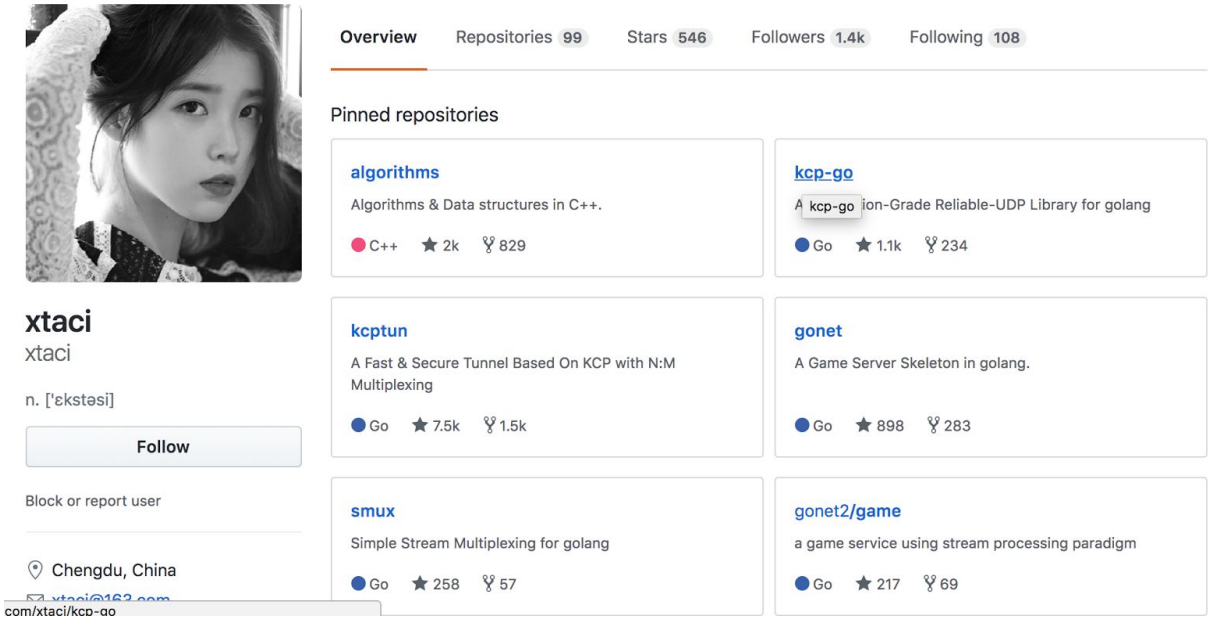
Dean's list (2008 - 2009)
NTU Hall dance competition champion (2007 - 2011)

Fu Li

We couldn't find Fu Li on LinkedIn but the Medium article referenced to above says this about him:

Fu Li is experienced in large complex software development and is ranked top 3 Golang code contributor on Github from China.

So we checked the Aelf GitHub, and we found one account that had a lot of Go contributions and that was username @xtaci https://github.com/xtaci



The article and combined with the evidence of multiple contributions to Golang code as well as connection to the Aelf GitHub has given us reason to believe that this account is held by Fu Li.

To further prove our point we did a reverse Google Image search with the profile picture and found the profile picture is of a Singaporean model - full photo shoot linked here.

Yang Yalong (Personal Website)
We appreciated the fact that Yang has a personal website, his bio according to his website (which may be a bit outdated is):

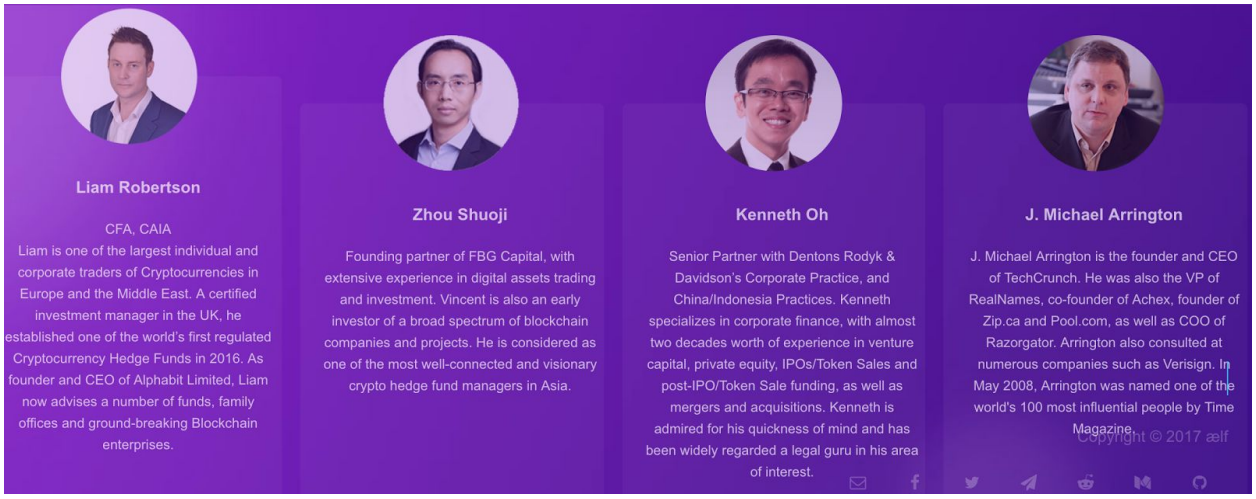
Yalong Yang is a PhD Candidate at Caulfield School of Information Technology, Monash University, VIC, Australia. He is working at Immersive Analytics Initiative and MArVL: Monash Adaptive Visualisation Lab under the supervision of Prof. Tim Dwyer, Prof. Kim Marriott, Dr Caron (Haohui) Chen from Data61, CSIRO and Dr. Sarah Goodwin.

His research topic is **Visualising Spatial Flow Data**. More details available at:

Yalong's Visualisation Gallery

He was supervised by Prof. Kang Zhang, from University of Texas at Dallas and Dr. Quang Vinh Nguyen, from MARCS, University of Western Sydney in a visualization project during his master study.

Advisors



We searched for "Liam Robertson Aelf" on Google and found this article which says:

Alphabit Fund Reveals 'Elf' as Cryptocurrency Pick of 2018

We have pasted an excerpt from the article on the next page for your convenience:

Alphabit CEO Liam Robertson, who manages the US$300million regulated Alphabit Digital Currency Fund, has said that AELF is his crypto pick for the coming year.

Speaking during a press conference in Dubai this week, Robertson predicted that AELF, (token symbol Elf), will deliver large scale commercial adoption of Blockchain technology and solve major transaction issues through its decentralised cloud operating system.

"I think we are witnessing a turning point in the Blockchain industry," Roberston said. "AELF is a new generation of scalable Blockchain computing network, using multi-chain structure and parallel processing to solve issues around efficiency, transaction throughput, and governance."

We briefly looked over the other advisors and found that they were associated with Aelf which is a good sign.
We also came across this Medium article dated from December 18, 2017:

Aelf, FBG Capital & Decentraland Join Forces to Create a Virtual Silicon Valley

Excerpt:

While our community continues to form the future of Decentraland, our team has been hard at work finalizing partnerships that will attract major blockchain projects to the platform. This week, we closed a deal with Aelf and FBG Capital to build a digital space within Decentraland called Crypto Valley.

GitHub

Right now the coin is listed as an ERC20 Ethereum token on Coinmarketcap but we unfortunately couldn't find the ERC20 smart contract token on their GitHub to audit, fortunately we found the mainnet which is written in C#.

We looked through the C# code and found many blank interfaces and unimplemented pieces of code which is understandable as this is a very early stage project. The code for the Merkle tree data structure was implemented and some basic object oriented scaffolding is laid out but we don't see any of the core technology implemented yet - we hope this changes in the coming months.

Let's look through some C# code samples from their GitHub - we understand it's a work in progress but we expect at least some implementation to be done


```
using System.Collections.Generic;

namespace AElf.Kernel.Merkle
{
    public interface IMerkleNode : IEnumerable<IMerkleNode>, ISerializable
    {

    }
}
```

We find that lot's of code is yet to be implemented and defined.

```
namespace AElf.Kernel
{
    /// <summary>
    /// An embeded dummy miner
    /// </summary>
    public class Miner : IMiner
    {
        /// <summary>
        /// Mine the specified blockheader.
        /// </summary>
        /// <returns>does not but serilize the block</returns>
        /// <param name="blockheader">Blockheader.</param>
        public byte[] Mine(IBlockHeader blockheader)
        {
            // TODO: return a serlized block header
            return null;
        }
    }
}
```

The dummy miner still needs to be implemented so that they can carry out their delegated proof of stake. At the current rate of development we do not expect mainnet

to be released for a long time unless significant efforts are done on the development side - this is our objective take based on the code which has been contributed so far to the master branch.

Roadmap, taken from their GitHub

Development Roadmap

Phase 1 : The Internal Affair Of The Wonderland (Nov 2017 - March 2018)

1. Graph-based scheduler algorithm implementation, see INTRO SCHEDULER.
2. Tagged primitive resource Data-Structure (sstable a.k.a. sorted string table), the basic element for resource isolation, backed by distributed KV database. This structure is comparable to dataflow processing paradigm (e.g. mr/reactivex).
3. In-cluster wire protocol (data/task marshal/unmarshal).
4. Actor (e.g. akka) based task distribution inside a single cluster/ledger.
5. Contract as demostration of concurrent execution.

Phase 2 : A Tale Between Two Nodes (March 2018 - May 2018)

1. tx_pool/mem_pool design (unconfirmed tx).
2. Basic block in-memory construct, eg: merkletree, block header, transactions, statsdb, caching.
3. Wire protocol for inter-ledger block/tx transfering.
4. DPoS implementation, hashing, mining.
5. Block validator, crypto related algorithms, e.g. signing, hmac.
6. p2p discovery/communication.

Phase 3: The Main Chain (May 2018)

1. Crosschain, two-way peg, merkle proofs.
2. Event trigger from one sidechain to another a.k.a cross chain interoperability.

Phase 4: Governance (May 2018 - August 2018)

1. Voting mechanism for sidechain join/leave

2. Voting mechanism for emergency treatment

Phase 5: Ready To Launch (August 2018 - January 2019)

1. Code optimization before mainnet launching.
2. Code review, pre-releases.
3. Business case battle test(public beta).

We find that the roadmap is very ambitious considering the amount of code that they currently have developed - especially being months into the project.

Notable News

Reddit post progress report - January 15th to January 28th

Merkle Aelf article information below

AELF IN A NUTSHELL

It becomes evident right away that aelf is not a project people should take lightly. Although its mission of building a "decentralized cloud computing blockchain network" may seem a bit vague at first, the project has raised a lot of money from various investors, most of whom reside in China. It is also worth noting that it is certainly possible to decentralize cloud computing. Unlike what most people think, the cloud is still a centralized cluster of computers or servers in a data center. Aelf wants to shake up that industry in the near future.

THE TECHNOLOGY TO POWER IT ALL

When it comes to ambitious projects such as aelf, the main question is whether or not it can actually build this technology from the ground up. According to its whitepaper, establishing a multi-chain parallel computing blockchain framework will not be easy. More specifically, aelf will need to develop a native operating system designed to meet commercial needs. Three main challenges will need to be countered: scalability, segregation of resources, and a predefined consensus algorithm to adopt updates.

To address all of this and more, the aelf project will consist of one main chain and various side chains. This branched ecosystem approach will open up a lot of exciting opportunities moving forward. Moreover, aelf is capable of connecting with Bitcoin, Ethereum, and other blockchain systems through an adaptor. Every individual chain in the aelf ecosystem will be dedicated to one type of transaction and tackle one type of business problem. From a commercial point of view, this solution makes a lot of sense.

The consensus protocol embraced by aelf will focus on DPoS. It is a system we have seen in a few other blockchain projects as well, although its actual potential has yet to be determined as of right now. If all goes according to plan, aelf will provide high performance combined with smart contracts running on their own blockchain and a way for token holders to vote for decision makers and representatives. A decentralized cloud network may eventually become a reality, assuming the team can put their vision into working code.

WHAT IS NEXT FOR AELF?

A lot of things have yet to be developed for the aelf ecosystem. For now, the team is focusing on Phase 1 of the project, with Phase 2 to follow in Q2 of this year. The launch of the main chain is scheduled for May, although that's still subject to change. The governance system will come to market during Phase 4, which is scheduled for later this year. Aelf's official launch will occur in January of 2019. There is a lot to look forward to if you are excited about aelf.

Here's is an excerpt of interest from an article by Global Coin Report:

To make this project more desirable and boost ELF sales, ***the team has organized a private sale where they managed to collect 55,000 ETH on behalf of ELF token****, that way boosting the price of this coin along the way. Another project with the idea of promoting ELF was recently launched when the team behind this coin invited people to join a project called Azeroth.* ***The launched project is supposed to reward anyone who applies and registers with free ELF tokens in a way known only to the registered parties that are participating in this project.***

Marketing wise Aelf is doing excellent. Below on the next page are some of their statistics regarding social media:

Social Media

Telegram 46,035 members
Twitter 58.1K followers
Reddit 881 readers on r/AelfOfficial, r/AelfTrader has 1,367 readers

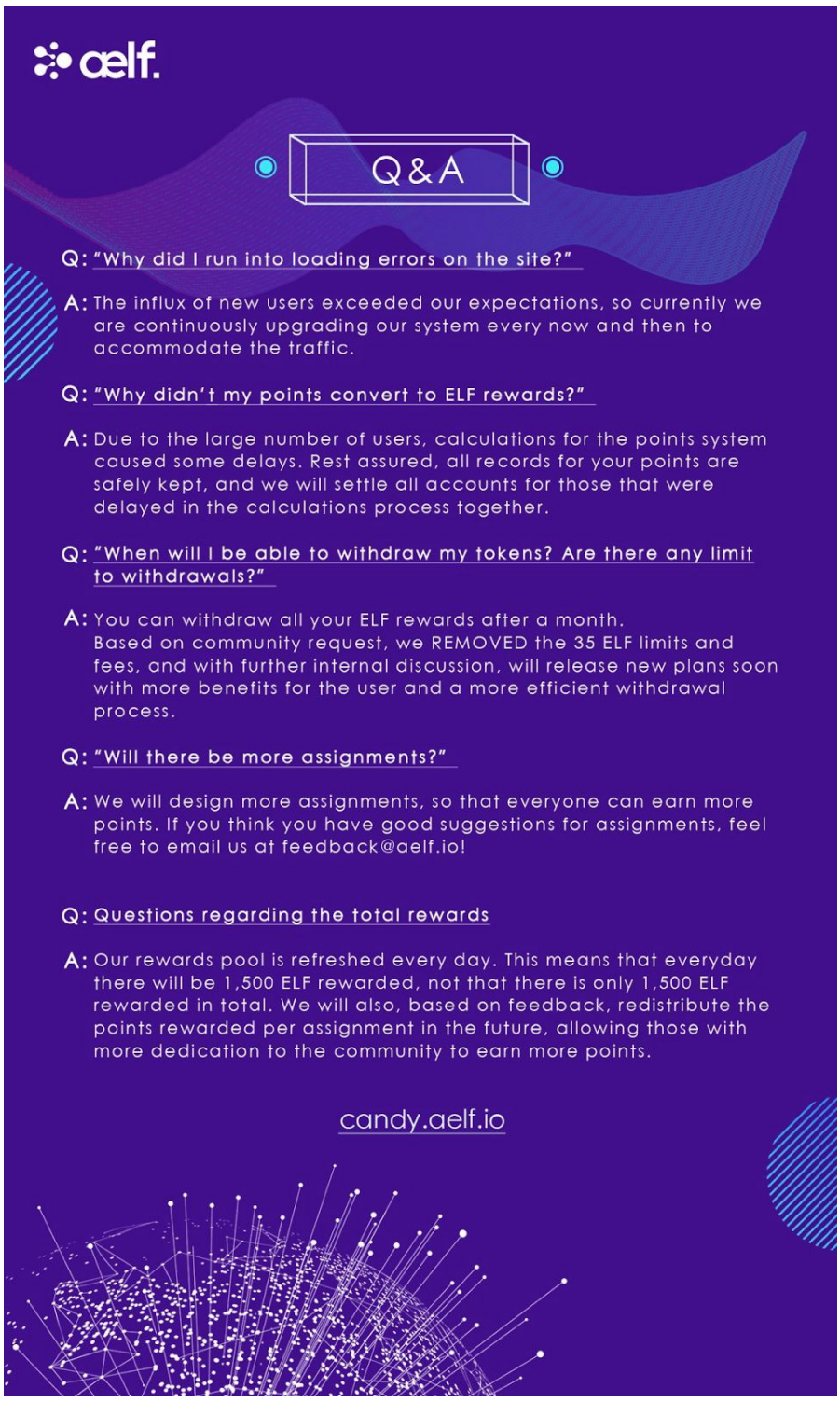
The lack of readers on Reddit gives us more reason to believe that there were followers which were largely bought on Twitter and perhaps Telegram.

Twitter Findings:

They're hiring blockchain developers in South Korea. This image is from their recent meetup in Seoul.

#Airdrop Round 2
Hi everyone, our candy system (AKA Azeroth Project) is officially launched, sign up here candy.aelf.io/account/regist … and earn your ELF now!

They're giving away free Aelf tokens in their candy program.



Here's a Q&A image taken from their Medium post in regards to their rewards program.

They have also been compared to Polkadot quite a bit so they wrote a blog post saying why they're different, here's an excerpt:

We have been asked by this question since the beginning. We believe it is necessary to present a straightforward answer: no, Polkadot and aelf are two different ideas.

First and foremost, we are different in visions and purpose. Polkadot envisions a Web where everyone's identity and data is safely secured from any central authority. Their aim is to reshape the existing internet structure into a completely decentralized web. Plainly speaking, they want to build a internet-native international law. Governed by this law, independent blockchains can exchange information and conduct trust-free transactions. aelf, however, aims to develop a blockchain technology into the real practice. The focus is not on chain-to-chain interactions, but on solving scalability challenge for existing blockchain system to tackle practical problems in every industry. With different purposes, Polkadot and aelf certainly adopt different approaches. Polkadot creates an inter-chain protocol that enforces the order and the validity of the messages between chains. This interoperability will allow a general environment for multiple state machines. aelf provides a "Main Chain + Side Chains" architecture that coordinate homogeneous chains hosting different Smart Contracts. It provides a joint security and data processing efficiency for all chains while still maintaining resource segregation with one chain to handle one business scenario though aelf OS.

YES, both Polkadot and aelf are multi-chain system, and NO, they are different in overall structure. In Polkadot's whitepaper, it mentions, "Polkadot links a set of independent chains." It provides bridges between heterogeneous multi-chain. aelf presents the same multi-chain structure but in a homogene, where multi-layer chains are built on a parallel processing model. So the focus here is not bridging chains but building a framework for practical operation using Blockchain technologies.
YES, both Polkadot and aelf provide possibilities for scaling, and NO, they are different in the path. Polkadot is designed to be a blockchain development, deployment and interaction test bed that realizes scaling and extensity. Its extensibility enables the assimilation of new blockchain technology without the help of over-complicated decentralised coordination on hard forks. aelf, however, enhance the scalability by empowering the nodes. Parallel processing is a pretty mature technology. We will utilize this technology to expand the processing speed on each node, and extend it to a cloud-based service.

Aelf Whitepaper

4. ÆIf System

4.1. ÆIf Architecture

We introduce the ÆIf consisting of one Main Chain and multiple Side Chains attached to the Main Chain (Figure 4.1). The difference from traditional Single Chain system is that ÆIf is a "branched eco-system" where Main Chain works as the backbone of the system and connects to multiple Side Chains (can be even multiple layers).

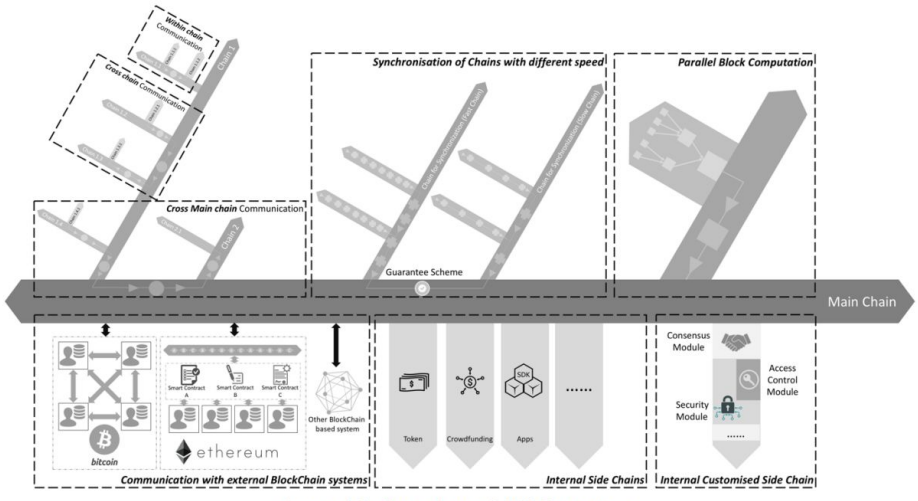


Figure 4.1: Overview of ÆIf Structure

The whitepaper includes mostly a top bird's eye description of what the project aims to be.

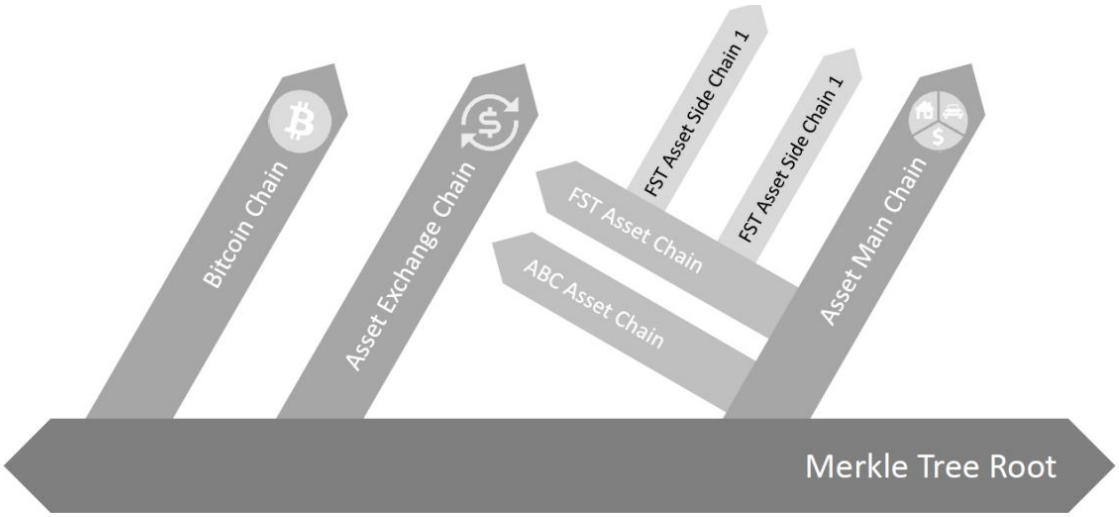


Figure 4.3: Multi-layer Side Chain Structure

For those who do not know what a Merkle tree is here is a brief description from Wikipedia:

Merkle tree

From Wikipedia, the free encyclopedia

In cryptography and computer science, a **hash tree** or **Merkle tree** is a tree in which every leaf node is labelled with the hash of a data block and every non-leaf node is labelled with the cryptographic hash of the labels of its child nodes. Hash trees allow efficient and secure verification of the contents of large data structures. Hash trees are a generalization of hash lists and hash chains.

Demonstrating that a leaf node is a part of a given binary hash tree requires computing a number of hashes proportional to the logarithm of the number of leaf nodes of the tree;[1] this contrasts with hash lists, where the number is proportional to the number of leaf nodes itself.

The concept of hash trees is named after Ralph Merkle who patented it in 1979.[2][3]

The whitepaper did not mathematically rigorously define the fundamentals of the project given the scope of it so we were not entirely impressed - but we encourage our readers to look over the document and come to their own conclusions.

Conclusion

We found that Aelf although they're working on a mainnet and have some code up they're still in a very early stage, their team according to their website is small and we haven't seen enough high quality code to rate them fundamentally sound. We found their candy program to be a clever marketing stunt and also view their partnerships with other coins such as Decentraland to also be positive on the business end of things, the project certainly is further along than many others and encourage readers to be on the lookout for any sort of developments in regards to the fundamentals.